

5

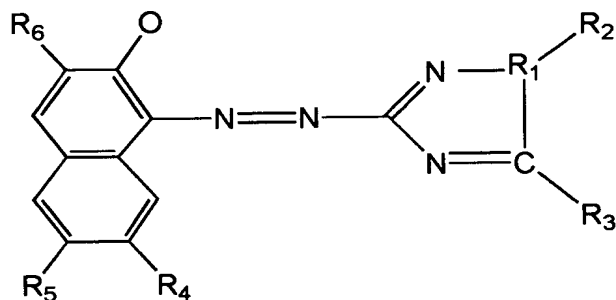
## CLAIMS

1. A magenta dye blend for formulating an ink-jet ink, comprising:
- (a) a nickel -containing azo dye, blended with
  - (b) a rhodamine dye,
- 10 said nickel -containing azo dye to rhodamine dye weight ratio being from 1:80 to 125:4.

15

2. A magenta dye blend as in claim 1, wherein the nickel -containing azo dye comprises a nickel metalized naphthol azo triazole.

3. A magenta dye blend as in claim 1, wherein the nickel -containing azo dye comprises a dye having the structure:



20

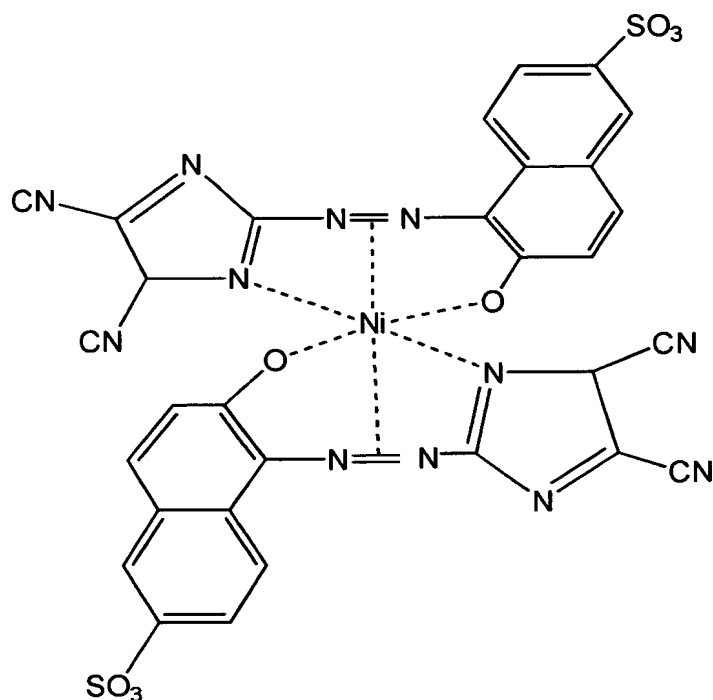
wherein the nickel to dye molecule ratio is 1:1, 1:2 or 2:2;

and wherein R<sub>1</sub> is N or C; R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are CN, COOM, SO<sub>3</sub>, SO<sub>3</sub>M, H, or SO<sub>2</sub>NH<sub>2</sub>;

and wherein M is H, Na, Li, K, NH<sub>4</sub>, ammonium substituted alkyl or

25 combinations thereof.

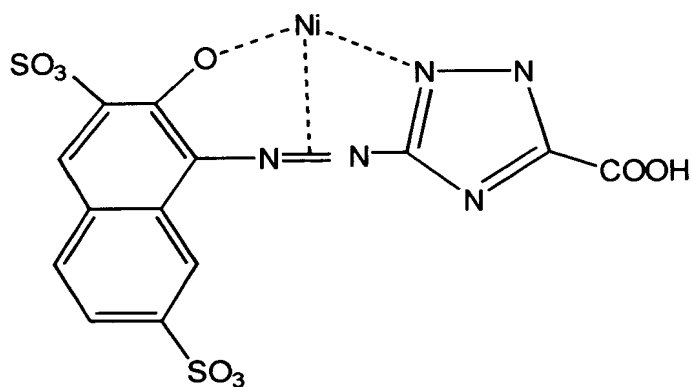
4. A magenta dye blend as in claim 3, wherein the nickel -containing azo dye comprises a dye having the structure:



5 wherein the nickel to dye molecule ratio is 1:2;  
and wherein  $R_1$  is C;  $R_2$  and  $R_3$  are CN;  $R_5$  is  $SO_3$ ; and  $R_4$  and  $R_6$  are H.

5. A magenta dye blend as in claim 3, wherein the nickel-containing azo dye comprises a dye having the structure:

10



wherein the nickel to dye molecule ratio is 1:1;  
and wherein R<sub>1</sub> is N; R<sub>2</sub> is H; R<sub>3</sub> is COOH; R<sub>4</sub> is SO<sub>3</sub>; R<sub>5</sub> is H and R<sub>6</sub> is SO<sub>3</sub>.

5

6. A magenta dye blend as in claim 1, wherein the rhodamine dye comprises a member selected from the group consisting of Acid Red 52, Acid Red 289, Acid Red 388, and mixtures thereof.

10

7. A magenta dye blend as in claim 1, wherein the nickel -containing azo dye is a single nickel -containing azo dye.

8. A magenta dye blend as in claim 1, wherein the nickel -containing azo dye is at least two nickel -containing azo dyes blended together.

15

9. A magenta dye blend as in claim 1, wherein the rhodamine dye is a single rhodamine dye.

10. A magenta dye blend as in claim 1, wherein the rhodamine dye is at least two rhodamine dyes blended together.

20

11. A magenta ink-jet ink for ink-jet printing, comprising:

- (a) an effective amount of an ink vehicle; and
- (b) from 0.9 wt% to 10.5 wt% of a magenta dye blend admixed in the ink vehicle, said magenta dye blend comprising a nickel -containing azo dye and a rhodamine dye at a weight ratio from 1:80 to 125:4.

25

12. A magenta ink-jet ink as in claim 11, wherein the rhodamine dye is present in the magenta ink-jet ink at from 0.1 wt% to 2.5 wt%.

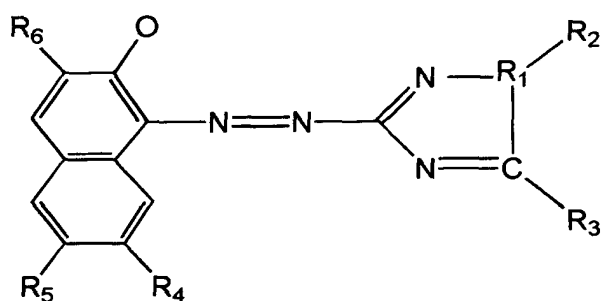
30

13. A magenta ink-jet ink as in claim 11, wherein the nickel -containing azo dye is present in the magenta ink-jet ink at from 0.8 wt% to 8 wt%.

14. A magenta ink-jet ink as in claim 11, wherein the nickel -containing azo dye comprises a nickel metalized naphthol azo triazole.

15. A magenta ink-jet ink as in claim 11, wherein the nickel -containing azo dye comprises a dye having the structure:

10

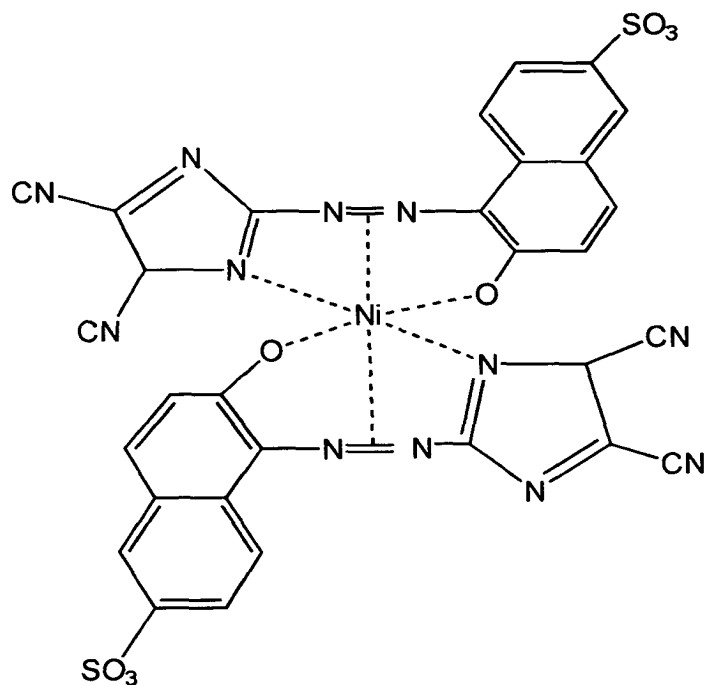


wherein the nickel to dye molecule ratio is 1:1, 1:2 or 2:2;

and wherein R<sub>1</sub> is N or C; R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are CN, COOM, SO<sub>3</sub>, SO<sub>3</sub>M, H, or SO<sub>2</sub>NH<sub>2</sub>;

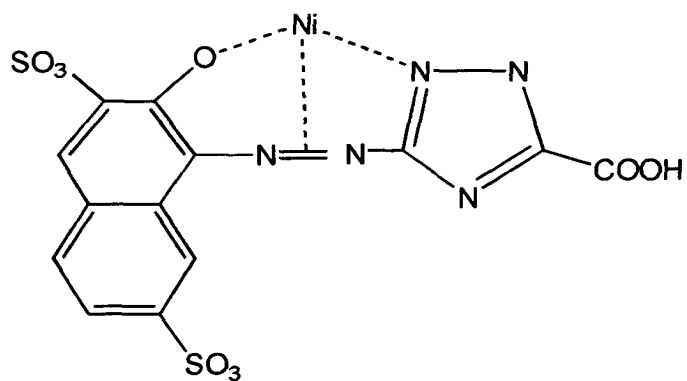
and wherein M is H, Na, Li, K, NH<sub>4</sub>, ammonium substituted alkyl or combinations thereof.

16. A magenta ink-jet ink as in claim 15, wherein the nickel -containing azo dye comprises a dye having the structure:



- 5 wherein the dye has a nickel to dye molecule ratio of 1:2;  
and wherein R<sub>1</sub> is C; R<sub>2</sub> and R<sub>3</sub> are CN; R<sub>5</sub> is SO<sub>3</sub>; and R<sub>4</sub> and R<sub>6</sub> are H.

17. A magenta ink-jet ink as in claim 15, wherein the nickel-containing azo dye comprises a dye having the structure:



10

wherein the nickel to dye molecule ratio is 1:1;

and wherein  $R_1$  is N;  $R_2$  is H;  $R_3$  is COOH;  $R_4$  is SO<sub>3</sub>;  $R_5$  is H and  $R_6$  is SO<sub>3</sub>.

18. A magenta ink-jet ink as in claim 11, wherein the rhodamine dye comprises a member selected from the group consisting of Acid Red 52, Acid Red 289, Acid Red 388, and mixtures thereof.

19. A magenta ink-jet ink as in claim 11, wherein the nickel -containing azo dye is a single nickel -containing azo dye.

20. A magenta ink-jet ink as in claim 11, wherein the nickel -containing azo dye is at least two nickel -containing azo dyes blended together.

21. A magenta ink-jet ink as in claim 11, wherein the rhodamine dye is a single rhodamine dye.

22. A magenta ink-jet ink as in claim 11, wherein the rhodamine dye is at least two rhodamine dyes blended together.

23. A magenta ink-jet ink as in claim 11, wherein the ink vehicle comprises from 5.0% to 50.0% by weight of solvent, from 0.01% to 10.0% of surfactant, and water.